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July 13, 2004

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: RAMESH et al Group Art Unit: 3721  
Serial No.: 09/764,673 Examiner: Harmon, C.R.  
Filing Date: January 18, 2001 Attorney Docket No.: D-42035-06  
Title: "BACKSEAMED CASING AND PACKAGED PRODUCT INCORPORATING  
SAME"

APPEAL BRIEF UNDER 37 C.F.R. 1.192

Commissioner of Patents  
Washington, D.C. 20231

Sir:

This Appeal Brief under 37 C.F.R. 1.192 is submitted further to the Notice of Appeal mailed 9 February 2004, received in the United States Patent and Trademark Office 13 February 2004, the two-month period for submission of the Appeal Brief being extended through 13 July 2004 by the accompanying petition for a 3-month extension of time. Applicants request that such extension be granted, and the undersigned authorizes the Commissioner to charge the appropriate fee(s) to Deposit Account No. 07-1765. Should any additional fees be deemed necessary, or any overpayment due, the Commissioner is authorized to charge and/or credit Deposit Account No. 07-1765 in the appropriate amount(s).

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Appellants respectfully request reversal of the various rejections, in view of the arguments presented below.

## **TABLE OF CONTENTS**

<b><u>Heading</u></b>	<b><u>Page</u></b>
Real Party in Interest	4
Related Appeals and Interferences	5
Status of Claims	6
Status of Amendments	7
Summary of Invention	8-9
Issues	10
Grouping of Claims	11
Argument	12-19
Appendix	20-25

### **REAL PARTY IN INTEREST**

The real party in interest in this patent application is Cryovac, Inc., the assignee of a 100% interest in this application.

### **RELATED APPEALS AND INTERFERENCES**

The undersigned is currently not aware of any related appeals or interferences.

### **THE STATUS OF THE CLAIMS**

The claims on appeal are Claims 29-48.

### **STATUS OF AMENDMENTS**

The only amendment which has been filed in this application is the Amendment under 37 CFR 1.111 filed 20 March 2003. This amendment was entered and a final Office Action thereafter mailed to Applicants on 9 October 2003. No amendment has been filed after the final office action.

## **SUMMARY OF THE INVENTION**

The invention is directed to a process for making a backseamed casing comprising: (1) preparing a multilayer film (2) wrapping the multilayer film around a forming shoe with opposing edges overlapped or abutted with one another, (3) sealing the film longitudinally for them a backseamed casing, and (4) forwarding the film. [Page 45 lines 3-13 and Page 27 lines 22-29; see also independent Claims 29 and 48.]

The multilayer film is a heat-shrinkable film having a first outer layer which serves as an inside layer of the casing, and which comprises a first polyolefin which comprises one or more polyolefins from a discrete listing of polyolefins. The multilayer film further comprises a second layer which comprises polyester and/or first polyamide, and a third layer which serves as an outside casing layer, the third layer comprising at least one member selected from the group consisting of second polyolefin, polystyrene, and second polyamide. [See Page 5 line 17 through Page 6 line 2.] The second layer is an internal film layer which is between the first layer and the third layer. The second layer has a thickness of at least about 5 percent of a total thickness of the heat-shrinkable film. [See Page 5 line 17 through Page 6 line 2.]

In the process of the invention, the multilayer film is wrapped around a forming shoe and backseamed, followed by being forwarded. [Page 45 lines 3-13 and Page 27 lines 22-29.] It has been discovered that the second layer (which is an internal layer, as it is between the first layer and the third layer) having a thickness which is at least about 5% of the total thickness of the multilayer film, prevents the film from necking down on the forming shoe during backseaming. [See Page 43 line 21 through Page 53 line 18, i.e., Examples 1-6, each of which exhibited good backseamability without necking down problems, each film having the recited internal layer



comprising nylon.] Without the recited second layer, it was found that the necking down of the film on the forming shoe occurs to the extent that the film tightens so much around the forming shoe that the film splits or cannot be forwarded off of the forming shoe. [See Page 55 line 24 through Page 56 line 29, which shows that a film wholly lacking an internal layer comprising polyamide and/or polyester exhibited a severe necking down problem; see also Page 53 line 19 through Page 54 line 23, which exemplifies that a nylon layer having a thickness of only 3.9 percent of total film thickness exhibited intermittent film rupture due to necking down on the forming shoe.]

## **ISSUES**

The issues on appeal are as follows:

### **I. WHETHER CLAIMS 29-48 ARE INDEFINITE BECAUSE**

**THEY RECITE TERMS SUCH AS:**

**“FIRST POLYAMIDE”,  
“SECOND POLYOLEFIN”,  
“SECOND POLYAMIDE”,  
“THICKNESS OF AT LEAST ABOUT 5% OF A  
TOTAL THICKNESS”  
“OF AT LEAST 90 DEGREES”,  
“AT LEAST 9 PERCENT”  
“OF FROM ABOUT 5 TO 20 PERCENT”  
ETC.**

### **II. WHETHER CLAIMS 29-48 ARE OBVIOUS OVER ANDERSON IN VIEW OF SCHIRMER**

## **THE GROUPING OF THE CLAIMS**

For the purpose of this appeal only, Claims 29-48 stand or fall together with respect to both Issue I and Issue II. However, Appellants reserve the right to later assert further and more specific arguments in support of the patentability or validity of any one or more of the dependent claims, for example, if a further appeal or continuation application is filed, in litigation of a patent issuing from the instant application, etc.

## **THE ARGUMENTS**

### **I. The Scope of Claims 29-48 is Ascertainable**

The scope of Claims 29-48 is ascertainable. Claims 29-48 are not indefinite for the recitation of the following phrases: “first polyamide”, “second polyolefin”, “second polyamide”, “thickness of at least about 5% of a total film thickness”, “of at least 90 degrees”, “at least 9 percent”, and “of from about 5 to 20 percent”. The rejection in the first Office Action of 20 November 2002 merely states that Claims 29-48 are indefinite in that they each recite these phrases, without any reason as to why any one or more of these phrases are indefinite. The final Office Action mailed 9 October 2003 reiterates the rejection of Claims 29-48, and states:

A first polyolefin has been defined in claim 29 as one of a specified group (or combination thereof) however when further classifying another group to be selected from “first polyamide” is not specific. “of at least about” and “of from about” are indefinite due to the use of “about”.

Applicants contend that the phrases such as “first polyamide” and “second polyamide” and “first polyolefin” and “second polyolefin” are not indefinite because the scope of the claim (including the phrase) is ascertainable. As to the Examiner’s reasoning that there is indefiniteness if “first polyolefin” includes a listing of various polyolefins while the phrase “first polyamide” is not accompanied by an analogous phrase, it should be noted that the designation of “first” and “second” is recited in order to satisfy antecedent basis, and to avoid a problem with antecedent basis. That is, if the first polyolefin is introduced as “a polyolefin”, and thereafter the second polyolefin is introduced as “a polyolefin”, there could be confusion because the same term should be recited first with the indefinite article “a” and thereafter with the definite article “the”.

However, since the second polyolefin need not be identical to the first polyolefin, and need not be confined by the listing for the first polyolefin but rather could include any polyolefin, it is (and was) appropriate to recite “first polyolefin” and “second polyolefin” in the claims. While one may be accompanied by a Markush listing of polyolefins, the other need not be accompanied by a Markush listing as it encompasses any polyolefin, including those in the listing as well as others. The same is true for the use of the phrases “first polyamide” and “second polyamide”. Thus, Applicants contend that these phrases serve to clarify the scope of the claims, rather than to impart confusion as to the scope of the claims.

As to the recitation of the word “about” in the claims, Applicants note that this term is intended to extend the recited range to include rounding. For example, the phrase “from about 5 to 20 percent” covers all ranges in which the endpoints are rounded to 5 to 20 percent, i.e., from 4.51 percent to 20.49 percent is included within the range of “from about 5 to 20 percent”. In at least one case, this type of approach to the scope of claims reciting “about” with respect to a range was utilized by the court in Viskase Corp. v. American National Can Co., 201 F.3d 1316, 59 U.S.P.Q.2d 1823 (Fed. Cir. 2001). Accordingly, Applicants contend that the presence of the word “about” does not render any one or more of Claims 29-48 indefinite.

Finally, the office actions both identify, as a basis for indefiniteness, the following phrase: “of at least 90°C” (Claim 33, reciting Vicat softening point) and “at least 9 percent” (i.e., Claim 34, reciting weight percent of unsaturated acid mer). However, neither the first office action nor the final office action explain why these phrases are indefinite. Applicants submit that a large number of U.S. patents could be cited with claims reciting such phrases. Moreover, the meaning of “at least 90°C” clearly refers to polymers having a Vicat softening temperature of 90° C as well as polymers having a Vicat softening temperature which is above 90°C. Of course, “...an

ethylene/unsaturated acid copolymer having an unsaturated acid mer present in an amount of at least 9 percent, based on the weight of the ethylene/unsaturated acid copolymer” ” clearly encompasses any ethylene unsaturated acid copolymer in which the amount of the ethylene/unsaturated acid mer is present at a level of 9 weight percent based on polymer weight, or in an amount greater than 9 percent, based on polymer weight. Thus, there does not appear to be any basis for stating that these phrases are indefinite, as the metes and bounds of the phrases are clearly ascertainable.

## II. Claims 29-48 Are Patentable over ANDERSON in view of SCHIRMER

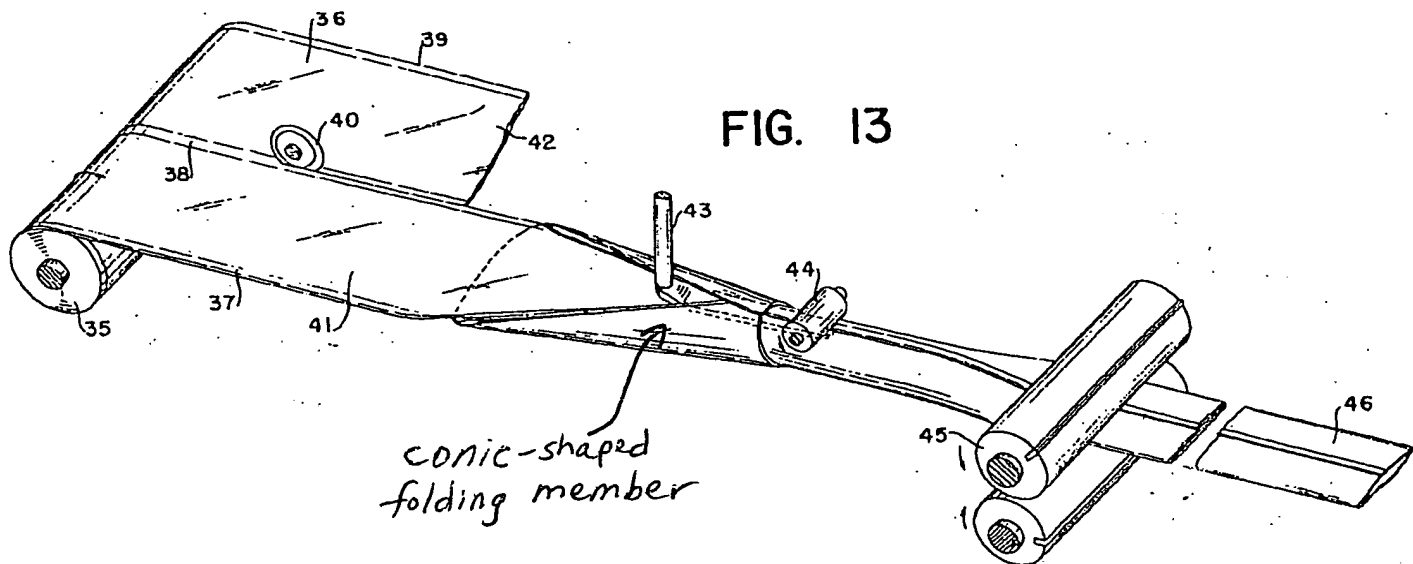
Claims 29-48 stand rejected as obvious over U.S. Patent No. 3,130,647, to Anderson et al (“ANDERSON et al”) in view of U.S. Patent No. 4,448,792, to Schirmer (“SCHIRMER”). ANDERSON et al is relied on by the Examiner for the backseaming of a multilayer heat-shrinkable film which is “wrapped longitudinally around a forming shoe”, and for the disclosure of varying the thickness of at least one ply of the multilayer web, with one or more layers including polyethylene, styrene, nylon, vinylidene and chloride fluorocarbon plastic. Moreover, the office actions state that it would have been obvious to one of ordinary skill in the art to select a plastic such as an anhydride containing polyolefin with at least 1 percent weight anhydride as a matter of design choice, or any other polymer. As to the thickness ranges and weight percentages, the Office Action states that it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

In response to the §103 rejection, Applicants contend that Claims 29-48 are patentable over ANDERSON et al in view of SCHIRMER for at least two reasons: (1) ANDERSON et al in view of SCHIRMER does not establish a prima facie case of obviousness, and (2) even if a prima facie case of obviousness of Claims 29-48 has been made out (which is not the case), Applicant's have set forth unexpected results of Claims 29-48 over ANDERSON et al in view of SCHIRMER.

Before turning to a discussion of the specifics of ANDERSON et al and SCHIRMER, Applicants note that each of the pending independent claims is directed to a process in which a multilayer film is wrapped around a forming shoe and backseamed, followed by being forwarded. The multilayer film has first and third layers which are outer film layers, and a second layer (which is an internal layer, because it is between the first layer and the third layer) having a thickness which is at least 5% of the total thickness of the multilayer film. The second layer comprises polyamide and/or polyester. Applicants have discovered that the presence of an internal layer comprising polyamide and/or polyester and having a thickness of at least 5% of the total film thickness solves a problem. The problem is that the film necks down on the forming shoe during backseaming, i.e., shrinks tightly against the forming shoe during backseaming. The necking down of the film on the forming shoe has been found to occur to the extent that the film tightens so much around the forming shoe that the film splits or cannot be forwarded off of the forming shoe because it is so tight around the forming shoe. The presence of the internal layer comprising nylon and/or polyester, having a thickness of at least 5% of the total film thickness, decreases the necking down to the extent that film splitting and inability to forward the film no longer occur during the backseaming process. Thus, contrary to the statement in the Office Action that Applicants have not disclosed that their film design provides an advantage, it is clear

that indeed Applicants' film design DOES provide an advantage, in that it solves the problems which flow from the extent to which the film of the prior art necks down on the forming shoe.

Turning now to the lack of a prima facie case of obviousness, Applicants first direct attention to FIG. 13 of ANDERSON et al.



As can be seen, the "multilayer web strip" is passed through a "folding and sealing station" in which the "marginal edge portions" of the web strip are "overlapped and bonded together". It is important to note that the film passes *inside* the conic-shaped folding member. See FIG. 13 above. Because the film is inside the folding member, *it is not possible for the film to "neck down" against the folding member*, because the film is not "wrapped around" the folding member. That is, shrinkage of the film during sealing will cause the film to move *inward and away* from the conic-shaped folding member, rather than to cause it to become wrapped more tightly around the folding member. Thus, since neither ANDERSON et al nor SCHIRMER discloses a film which is sealed while it is wrapped around a forming shoe (as recited by Claims 29 and 48, the only pending independent claims on appeal), ANDERSON et al in view of



SCHIRMER clearly fails to establish a prima facie case of obviousness of any one or more of Claims 29-48.

As a further reason that the office actions fail to set forth a prima facie case of obviousness of any one or more of Claims 29-48, Applicants note that ANDERSON et al discloses backseamed bags made from webs which are loosely bonded to one another, with, for example, one of the webs being polyethylene or polystyrene or polyamide or polyvinylidene chloride (or other polymer), and the other web being provided with an outer layer of paper or foil or cellophane. The Office Action does not point out where or how ANDERSON et al specifically teaches or specifically suggests a multilayer structure having an internal layer which makes up at least 5% of the overall film thickness and which comprises polyamide and/or polyester, as recited in each of Applicants' independent Claims 29 and 48. Moreover, a review of ANDERSON et al by the undersigned does not reveal any teaching or suggestion in ANDERSON et al of a multilayer film having such an internal layer. Applicants contend that with no teaching or suggestion of a film having such an internal layer, and with no motivation to modify the structure of ANDERSON et al to arrive at a multilayer film having such an internal layer, this is an additional reason that ANDERSON et al in view of SCHIRMER does not establish a prima facie case of obviousness of either of Applicants' independent Claims 29 and 48.

Applicants further contend that while the rejection is based on ANDERSON et al in view of SCHIRMER, the Office Action relies upon SCHIRMER for the disclosure of multilayer films having six layers, including an oxygen barrier layer comprising polyvinylidene chloride, in the form of a casing film which shrinks at 185°F, and that SCHIRMER discloses using propylene

homo- or co-polymers for a specific layer, as well as the presence of a crosslinked polymer network. However, Applicants point out that the Office Action does not state that SCHIRMER teaches or suggests a second layer which is an internal layer and which comprises nylon and/or polyester, with the internal layer making up at least 5% of the total film thickness. Rather, as pointed out above, the office actions appear to have relied on ANDERSON et al, rather than SCHIRMER, for the disclosure of an internal nylon layer making up at least about 5 percent of the total film thickness. Thus, neither ANDERSON et al nor SCHIRMER teach or suggest this feature, which is recited in both of Applicants' independent claims. As a result, coupled with Applicants' evidence that this feature is critical to the operability of their claimed process, it is clear that Claims 29 and 48 are patentable over ANDERSON et al in view of SCHIRMER, as no prima facie case of obviousness has been set forth in either of the office actions. Moreover, Applicants' solution to the necking down problem is an unexpected result which would overcome any prima facie case if a prima facie case of obviousness has been established, which clearly is not the case.

The office actions appear to be taking the position that variations of layer thickness and layer composition are "obvious matters of design choice". Applicants disagree. There must be some teaching or suggestion or some basis for a motivation to arrive at Applicants' claimed process from the disclosures of ANDERSON et al and SCHIRMER. ANDERSON et al fails to recognize any necking down problem during the backseaming of a film which has been wrapped around a forming shoe. This is for good reason: ANDERSON et al fails to disclose wrapping a film around a forming shoe. The "folding member" in FIG. 14 of ANDERSON et al is not a forming shoe, as discussed above. Although SCHIRMER teaches multilayer films for cook-in end use, SCHIRMER does not teach or suggest a multilayer film having an internal layer

comprising nylon and/or polyester, as recited in Applicants' independent Claims 29 and 48.

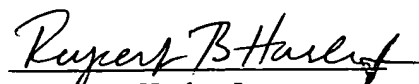
The combination of ANDERSON in view of SCHIRMER fails to teach or suggest a multilayer film having an internal layer comprising polyamide and/or polyester with the layer having a thickness of at least about 5% of the total film thickness. This is an additional reason that Applicants' claims are all patentable over ANDERSON et al in view of SCHIRMER. In making the arguments for the patentability of the pending independent claims, Applicants do not waive any additional arguments to these or any other pending claims in this application.

Finally, Applicants direct attention to the backseaming results for Applicants' Examples 1-6 with the comparative results provided for Applicants' Comparative Examples 7 and 9, as set forth on Pages 43-56, as well as the summary on Page 62 line 14 through Page 73 line 26 of Applicants' specification. Applicants contend that even if a prima facie case of obviousness has been made out, the results set forth in Applicants' specification rebut the prima facie case with evidence of unexpected results and problem solved.

### **III. CONCLUSION**

Applicants contend that all of the pending claims on appeal are in condition for allowance. Reconsideration of the patentability of the claims is respectfully requested, with a view towards reversal of the various rejections. Should there be any questions or comments, the Board is invited to contact the undersigned at the telephone number provided below.

Respectfully Submitted,



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13 July 2004

## **APPENDIX**

The claims on appeal are Claims 29-48, as follows:

29. A process for making a backseamed casing, comprising:

(A) preparing a multilayer heat-shrinkable film comprising:

- (i) a first outer layer serving as an inside casing layer, the first outer layer comprising a first polyolefin comprising at least one member selected from the group consisting of:
  - (a) ethylene/unsaturated acid copolymer, propylene/unsaturated acid copolymer, and butene/unsaturated acid copolymer, wherein the unsaturated acid is present in an amount of at least 4 weight percent, based on the weight of the copolymer; and
  - (b) anhydride-containing polyolefin comprising an anhydride-functionality, wherein the anhydride functionality is present in an amount of at least 1 weight percent, based on the weight of the anhydride-containing polyolefin;
- (ii) a second layer comprising at least one member selected from the group consisting of polyester and first polyamide; and
- (iii) a third layer serving as an outside casing layer, the third layer comprising at least one member selected from the group consisting of second polyolefin, polystyrene, and second polyamide; and

wherein the second layer is between the first layer and the third layer, and the second layer has a thickness of at least about 5% of a total thickness of the heat-shrinkable casing film;

- (B) wrapping the film longitudinally around a forming shoe with opposing length film sheet edges being overlapped or abutted with one another;
- (C) sealing the film longitudinally to form a backseam; followed by
- (D) forwarding the film.

30. The process according to claim 29, wherein the third layer comprises the second polyolefin.

31. The process according to claim 30, wherein the second layer comprises the first polyamide.

32. The process according to claim 30, wherein the first layer further comprises a third polyolefin comprising at least one member selected from the group consisting of polyethylene homopolymer, polyethylene copolymer, polypropylene homopolymer, polypropylene copolymer, polybutene homopolymer, and polybutene copolymer.

33. The process according to claim 32, wherein the second polyolefin has a vicat softening point of at least 90°C, and the third polyolefin has a vicat softening point of at least 90°C.

34. The process according to claim 33, wherein the first polyolefin comprises an ethylene/unsaturated acid copolymer having an unsaturated acid mer present in an amount of at least 9 percent, based on the weight of the ethylene/unsaturated acid copolymer.

35. The process according to claim 33, wherein the third layer comprises the second polyamide.

36. The process according to claim 30, wherein the first polyolefin comprises an ethylene/unsaturated acid copolymer, the unsaturated acid is present in an amount of at least 6 weight percent, based on the weight of the ethylene/unsaturated acid copolymer.

37. The process according to claim 36, wherein the casing film further comprises a fourth layer, the fourth layer being an inner layer serving as an O<sub>2</sub>-barrier layer, the fourth layer comprising at least one member selected from the group consisting of ethylene/vinyl alcohol copolymer, polyvinylidene chloride copolymer, polyethylene carbonate copolymer and polyamide.

38. The process according to claim 37, wherein the second layer and the fourth layer are directly adhered.

39. The process according to claim 37, wherein the casing film further comprises a fifth layer and a sixth layer, wherein:

the fifth layer is between the first layer and the second layer, and the sixth layer is between the second layer and the third layer;

the fifth layer comprises at least one member selected from the group consisting of fourth polyolefin, polystyrene and polyurethane; and

the sixth layer comprises at least one member selected from the group consisting of fifth polyolefin, polystyrene and polyurethane.

40. The process according to Claim 29, wherein the second layer consists essentially of at least one member selected from the group consisting of polyester, and first polyamide.

41. The process according to claim 40, wherein:

the second layer has a thickness of from about 5 to 20 percent, based on a total thickness of the multilayer film; and

the fourth layer has a thickness of less than about 15%, based on a total thickness of the multilayer film.

42. The process according to claim 40, wherein the first polyamide comprises at least one member selected from the group consisting of polyamide 6, polyamide 66, polyamide 9, polyamide 10, polyamide 11, polyamide 12, polyamide 69, polyamide 610, polyamide 612, polyamide 6I, polyamide 6T, and copolymers thereof.

43. The process according to claim 29, wherein the casing film has biaxial orientation, and a free shrink, at 185°F, of at least 10% in at least one direction.

44. The process according to claim 43, wherein at least a portion of the casing film comprises a crosslinked polymer network.

45. The process according to claim 29, wherein the backseam casing is a lap-seal backseam casing.

46. The process according to claim 29, wherein the second layer comprises the first polyamide and further comprises a third polyamide.

47. The process according to claim 29, wherein the second layer has a thickness of from 5% to about 20% of a total thickness of the heat-shrinkable casing film total film thickness.

48. A process for making a backseamed casing, comprising:

(A) preparing a multilayer heat-shrinkable film comprising:

(i) a first outer layer serving as an inside casing layer, the first outer layer comprising a first polyolefin, the first outer layer having a surface energy level of less than about 34 dynes/cm;

(ii) a second layer comprising at least one member selected from the group consisting of polyester and first polyamide; and

(iii) a third layer serving as an outside casing layer, the third outer layer comprising at least one member selected from the group consisting of a second polyolefin, polystyrene and second polyamide;



wherein the second layer is between the first layer and the third layer, and the second layer has a thickness of at least 5% of a total thickness of the heat-shrinkable casing film;

- (B) wrapping the film longitudinally around a forming shoe with opposing length film sheet edges being overlapped or abutted with one another;
- (C) sealing the film longitudinally to form a backseam; followed by
- (D) forwarding the film.